

ABSTRACT OF THE DISCLOSURE

A three dimensional display system 100 using two spatial light modulators and a single projection path. Light source 102 emits a white light beam 104 which typically is focused onto an aperture of a recycling integrator 106. The light beam travels through the recycling integrator 106 and is reflected several times by the walls of the integrator 106. The sequential color filter creates a filtered light beam comprised of at least three spatially separated light beams. The filtered light beam, containing the colored filtered sub-beams, is separated by a polarizing beam splitter 116 into two separate light beams, each comprising a portion of each color sub-beam created by the sequential color filter. A first portion of the light beam having a first polarization state is passed to a first spatial light modulator 112. A second portion of the light beam having a second polarization state is reflected to a second spatial light modulator 114. The two modulators 112, 114 receive pixel data from a controller 118 and use the pixel data to modulate the light incident each of the modulators. A projection lens 118 receives the modulated light beam and focuses the modulated light beam on an image plane 120. A viewer uses polarizing eyewear 122 to view the projected image. The polarizing eyewear 122 allows light of one polarization to pass through to the viewer's left eye, and light of the other polarization to pass through to the viewer's right eye creating the perception of a three dimensional image.